

MULTIMEDIA



UNIVERSITY

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# MULTIMEDIA UNIVERSITY

## FINAL EXAMINATION

TRIMESTER 1, 2016/2017

### BIE2024 – INTERMEDIATE MICROECONOMICS (Group 1)

15 OCTOBER 2016

9 a.m – 11 a.m

(2 Hours)

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#### INSTRUCTIONS TO STUDENTS

1. This question paper consists of TWELVE (12) printed pages with:  
**Section A:** Forty (40) multiple choice questions (40 marks)  
**Section B:** Three (3) structured questions (60 marks)
2. Answer **ALL** questions.
3. Answer **Section A** in the multiple-choice answer sheet and **Section B** in the answer booklet provided.
4. Marks allocations are shown at the end of each question.

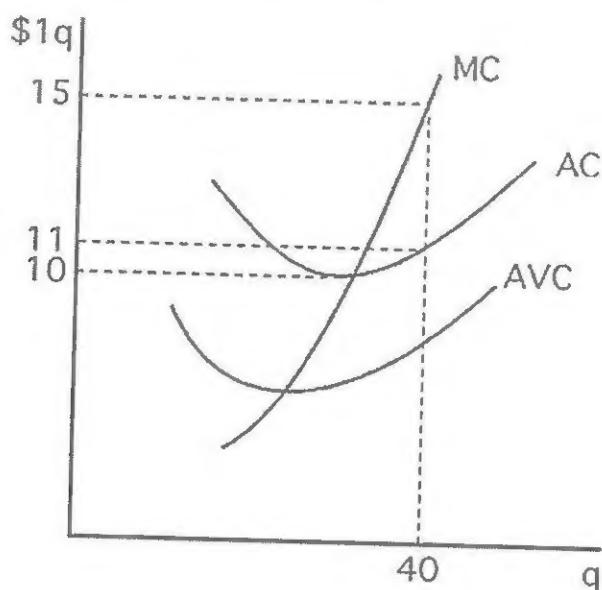
**SECTION A: MULTIPLE CHOICE QUESTIONS (40 MARKS)**

**Instruction:** Answer all questions in the multiple choice answer sheet.

1. If a firm is a price taker, then its marginal revenue will always equal to
  - A. price.
  - B. total cost.
  - C. zero.
  - D. one.
2. The competitive firm's supply curve is equal to
  - A. its marginal cost curve.
  - B. the portion of its marginal cost curve that lies above AC.
  - C. the portion of its marginal cost curve that lies above AVC.
  - D. the portion of its marginal cost curve that lies above AFC.
3. A firm will shut down in the short run if
  - A. total fixed costs are too high.
  - B. total revenue from operating would not cover all costs.
  - C. total revenue from operating would not cover variable costs.
  - D. total revenue from operating would not cover fixed costs.
4. If a monopoly's Lerner Index exceeds 1, then
  - A. it is earning maximum profit.
  - B. it has ultimate market power.
  - C. it must be pricing below marginal cost.
  - D. marginal revenue is negative.
5. If the inverse demand curve a monopoly faces is  $p=100-2Q$ , and MC is constant at 16, then the firm's Lerner Index equals
  - A. 58/16.
  - B. 16/42.
  - C. 58/42.
  - D. 42/58.

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Refer to the **Exhibit 1** below to answer the questions 6-7.

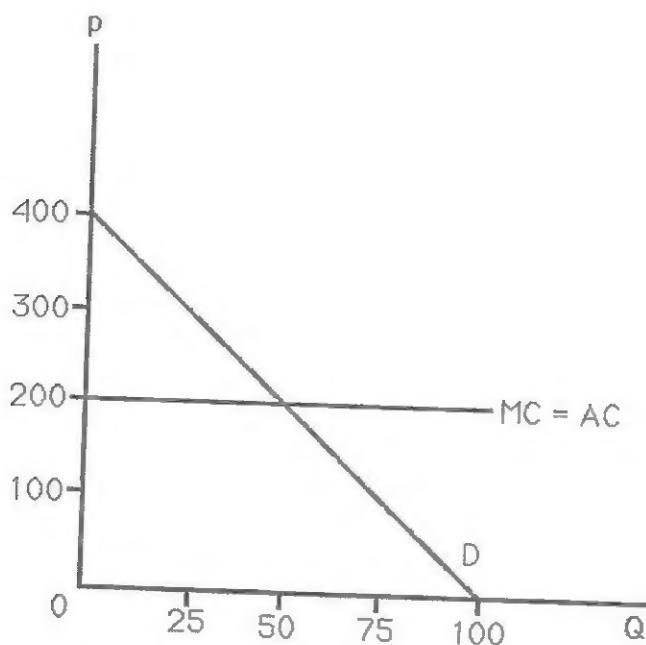


*Exhibit 1*

6. The **Exhibit 1** shows the cost curves for a competitive firm. If the firm is to operate in the short run, price must exceed  
A. \$0.  
B. \$5.  
C. \$10.  
D. \$11.
7. The **Exhibit 1** shows the cost curves for a competitive firm. If the profit-maximizing level of output is 40, price is equal to  
A. \$0.  
B. \$15.  
C. \$10.  
D. \$11.

Continued...

Refer to the **Exhibit 2** below to answer the questions 8-11.



*Exhibit 2*

8. The **Exhibit 2** shows the demand and cost curves facing a monopoly. The deadweight loss of this monopoly is  
A. \$100.  
B. \$250.  
C. \$1,250.  
D. \$2,500.
9. The **Exhibit 2** shows the demand and cost curves facing a monopoly. A \$100 per unit tax would raise price by  
A. \$100.  
B. \$50.  
C. \$25.  
D. \$0.
10. **Exhibit 2** shows the demand and cost curves facing a monopoly. If a \$100 per unit tax is charged, what is the tax incidence on consumers?  
A. 100%  
B. 50%  
C. 25%  
D. 0%

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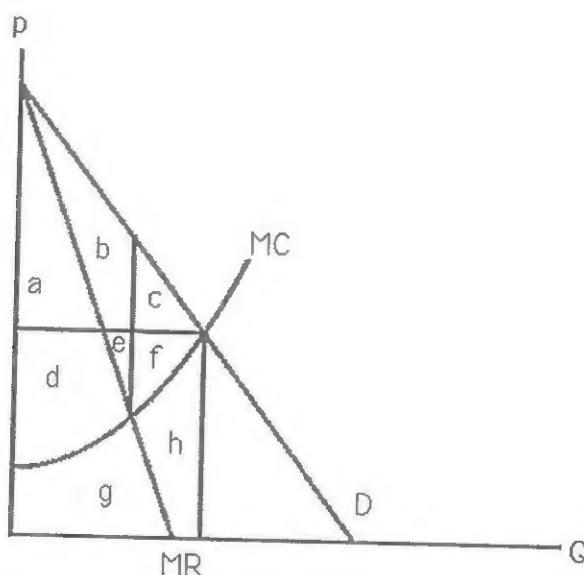
11. The Exhibit 2 shows the demand and cost curves facing a monopoly. If a \$100 per unit tax is charged, the loss in welfare resulting from the tax is  
A. \$250.  
B. \$312.50.  
C. \$1,250.  
D. \$1,562.50.

12. Suppose a patent is granted for a product that has the linear demand curve  $P = a - bQ$ . The constant marginal cost of producing this product is \$50 per unit, a unit sells for \$150, and consumers purchase 100 units of the good at that price. If the monopoly is maximizing profit, b equals  
A. 1.  
B. 1.5.  
C. 2.  
D. 2.5.

13. Given the inverse demand curve  $P = 60 - Q$ , variable costs are  $Q^2$ , its marginal costs are  $2Q$ , and it has fixed costs of 30. If a governmental agency imposes an \$8 per unit specific tax on output, the deadweight loss from both the monopoly and the tax is  
A. \$37.50.  
B. \$73.00.  
C. \$526.50.  
D. \$562.50.

Continued...

Refer to the Exhibit 3 below to answer the questions 14.



*Exhibit 3*

14. Exhibit 3 shows the demand and marginal cost curves for a monopoly. The deadweight loss of this monopoly equals
  - A. h.
  - B. c.
  - C. c + f.
  - D. c + d + e + f.
  
15. A monopolist faces the inverse demand curve  $P=60-Q$ . It has variable costs of  $Q^2$  so that its marginal costs are  $2Q$ , and it has fixed costs of 30. The monopoly's profit maximizing output is
  - A. 5.
  - B. 10.
  - C. 15.
  - D. 20.
  
16. Perfect competition and monopolistic competition are similar in that both market structures include
  - A. price-taking behavior by firms.
  - B. a homogeneous product.
  - C. no barriers to entry.
  - D. very few firms.

Continued...

17. Product differentiation

- A. is possibly welfare enhancing if new products match consumer preferences better.
- B. is welfare reducing even if new products match consumer preferences better.
- C. is welfare enhancing even if new products do not match consumer preferences better.
- D. is welfare reducing even if new products do not match consumer preferences better.

18. In the short run, a monopolistic competitor

- A. produces at minimum efficient scale.
- B. produces where  $P = AC$ .
- C. sets  $P = MC$ .
- D. sets  $MR = MC$ .

19. The Bertrand model of price setting assumes that a firm chooses its price

- A. independently of what price other firms charge.
- B. subject to what price rival firms are charging.
- C. so that joint profits are maximized.
- D. without considering the shape of the demand curve.

20. Suppose a monopolistically competitive industry evolved into a perfectly competitive industry. Which of the following statements is correct?

- A. The industry would produce more output and charge a lower price after the change.
- B. The industry would produce at decreasing returns to scale.
- C. Elasticity of demand for the firm's product would remain the same after this change occurred.
- D. This industry would produce the same level of output at lower prices in the long run than before the change.

21. Suppose duopolists face the market inverse demand curve  $P=100-Q$ ,  $Q=q_1+q_2$ , and both firms have a constant marginal cost of 10. If firm 1 is a Stackelberg leader and firm 2's best response function is  $q_2=(100-q_1)/2$ , at the Nash-Stackelberg equilibrium firm 1's output is

- A. 30.
- B. 40.
- C. 60.
- D. 70.

22. In the Cournot model, if the products are differentiated,

- A. this reduces the pressure of one firm's decisions on the other.
- B. this increases the pressure of one firm's decisions on the other.
- C. there is no difference between this model and one with homogeneous goods.
- D. marginal costs are necessarily different.

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23. Monopolistic competition and perfect competition differ because

- only monopolistically competitive firms will set  $MR=MC$ .
- only perfectly competitive firms will set  $MR=MC$ .
- only monopolistic competition allows for entry of other firms in the long run.
- only competitive firms take the price as given.

24. Perfect competition and monopolistic competition are similar in that firms in both types of market structure will

- act as price takers.
- produce a level of output where price equals marginal cost.
- earn zero profit in the long run.
- act as price setters.

25. In the short run, the competitive firm will hire more labor if

- the wage rate increases.
- the price the firm receives for the output increases.
- the price the firm receives for the output decreases.
- a specific tax is imposed on the output.

26. The amount of labor a firm employs depends on

- the market wage.
- the market price for the good produced.
- Both A and B.
- None of the above.

27. Because the labor supply curve for a monopsonist is upward sloping, the monopsonist

- hires zero units of labor.
- chooses the perfectly competitive quantity of labor.
- must increase the wage to attract more units of labor.
- must take the wage as given by the market.

28. If a firm buys some labor in a competitive market and some labor as a monopsonist, the firm is most likely to

- pay the same wage to both types of labor.
- pay a lower wage to the labor purchased in the competitive market.
- pay a higher wage to the labor purchased in the competitive market.
- not exercise any of its monopsony power.

29. The steeper the labor supply curve,

- the higher the wage the monopsonist pays.
- the lower the wage the monopsonist pays.
- the smaller the difference between the wage and the marginal expenditure on labor.
- the better off workers are.

Continued...

30. The term *prisoners' dilemma* refers to a game in which

- there are no Nash equilibria.
- there are no dominant strategies.
- the payoff from playing the dominant strategy is the same for each player.
- the payoff from playing the dominant strategy is not the highest payoff possible.

31. Collusion is more likely to occur when

- there is fear of punishment for not colluding.
- there is a known finite time horizon.
- there are large gains to be made by cheating on an agreement.
- the game lasts only one period.

Refer to the Exhibit 4 below to answer the questions 32.

		Incumbent	
		Stackelberg (accommodate)	Deter
Firm 2	Enter	500	450
	Do Not Enter	150	0
		1000	900
		0	0

Exhibit 4

32. Exhibit 4 shows the payoff matrix facing an incumbent firm and a potential entrant. The potential entrant cannot earn a profit if the incumbent

- chooses the Cournot level of output.
- chooses the Stackelberg leader level of output.
- shuts down.
- deters entry.

33. A sub-game perfect Nash equilibrium is defined as

- a set of strategies that are a Nash equilibrium in every subgame of a static game.
- a set of strategies that are a Nash equilibrium in every subgame of a dynamic game.
- a set of strategies that are a Nash equilibrium in a single subgame of a dynamic game.
- the game within the game.

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34. Which of the following is NOT part of solving a game?

- A. Write down all possible combinations of strategies.
- B. Write down all possible payoffs and eliminate dominated strategies.
- C. Solve for any Nash Equilibrium.
- D. None of the above.

35. There are two closely related crops, X and Y, with the following demand functions  
 $Q_X = 180 - 2P_X + P_Y$  and  $Q_Y = 150 + P_X - P_Y$  where  $Q_X$  is the quantity of X,  $P_X$  is the price of X,  $Q_Y$  is the quantity of Y, and  $P_Y$  is the price of Y. These two crops are grown in two widely separated countries so there is no interrelationship between the supply curves. The short-run perfectly inelastic supply for X is 150 while the short-run perfectly inelastic supply for Y is 100. In equilibrium, the prices are

- A.  $P_X = 80, P_Y = 130$
- B.  $P_X = 40, P_Y = 65$
- C.  $P_X = 60, P_Y = 120$
- D.  $P_X = 30, P_Y = 80$

36. General equilibrium analysis is the study of

- A. how an equilibrium is determined in all markets simultaneously.
- B. how an equilibrium is determined in all closely related markets.
- C. the effects of a change in a market, and all spillover effects in all related markets.
- D. Any of the above.

37. The general equilibrium analysis of a minimum wage applied to only some sectors of the economy suggests that

- A. workers in all sectors will face increased wages.
- B. some workers in the covered sectors will lose their jobs and remain unemployed.
- C. some workers originally employed in the covered sectors will move to the uncovered sectors, driving down wages in the uncovered sectors.
- D. all workers will be worse off.

38. When comparing partial equilibrium effects to general equilibrium effects one can conclude that

- A. general equilibrium effects are always larger.
- B. partial equilibrium effects are always larger.
- C. the effects are of equal size.
- D. one cannot determine before the fact which effect is greater.

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39. If two or more markets are closely related,

- a partial equilibrium analysis will tend to overstate the price impact of a supply shock.
- a partial equilibrium analysis will tend to accurately predict the price impact of a supply shock.
- a partial equilibrium analysis will tend to underestimate the price impact of a supply shock.
- they should be analyzed concurrently but using partial equilibrium analysis alone.

40. The saying "what's that got to do with the price of tea?" reflects

- two markets where general equilibrium analysis would be most useful.
- two markets where general equilibrium analysis likely won't be very useful.
- two markets where the products are clearly closely related.
- two markets where firms are incredibly greedy.

## SECTION B: STRUCTURED QUESTIONS (60 MARKS)

**Instruction:** Answer all questions in the answer booklet provided.

### Question 1 (25 marks)

(a) Suppose a monopolist has  $TC=100+10Q+2Q^2$ , and the demand curve it faces is  $p=90-2Q$ .

(i)	What will be the quantity for this firm?	(4 marks)
(ii)	What will be the price for this firm?	(3 marks)
(iii)	What is the profit for this firm?	(6 marks)

(b) Suppose that market demand for a good is  $Q=480-2p$ . The marginal cost is  $MC=2Q$ .

(i)	Solve for the competitive equilibrium.	(6 marks)
(ii)	Calculate the deadweight loss resulting from a monopoly in this market.	(6 marks)

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**Question 2 (15 marks)**

You and a competitor are selling t-shirts with the college logo at a table on campus. You must decide whether to sell your t-shirts for \$15 each or \$20 each. The profit you receive will depend on how you decide to charge and how much your competitor decides to charge. The payoff matrix for the decision is given as Exhibit 5 below.

		You	
		\$15	\$20
Your Competitor	\$15	\$200 each You: 0 Competitor: \$400	
	\$20	You: \$400 Competitor: 0	\$300 each

*Exhibit 5*

- (a) If \$15 and \$20 are the only two price choices, what are the dominant strategies for you and your competitor? (5 marks)
- (b) Is there an equilibrium? If so, what is it? (5 marks)
- (c) If each firm knows that cutting price a little further from \$15 has the same effect as cutting if from \$20 to \$15, what will price equal to in the end? Explain your argument. (5 marks)

**Question 3 (20 marks)**

The Edgeworth box diagram (Exhibit 6) can be used to show how a production possibility frontier is constructed for an economy as a whole. Suppose there are only two goods that might be produced ( $X$  and  $Y$ ), each using two inputs, capital ( $K$ ) and labour ( $L$ ). Here, consider the lower-left (upper-right) corner of the box to be origin for the isoquant map for good  $X$  ( $Y$ ).

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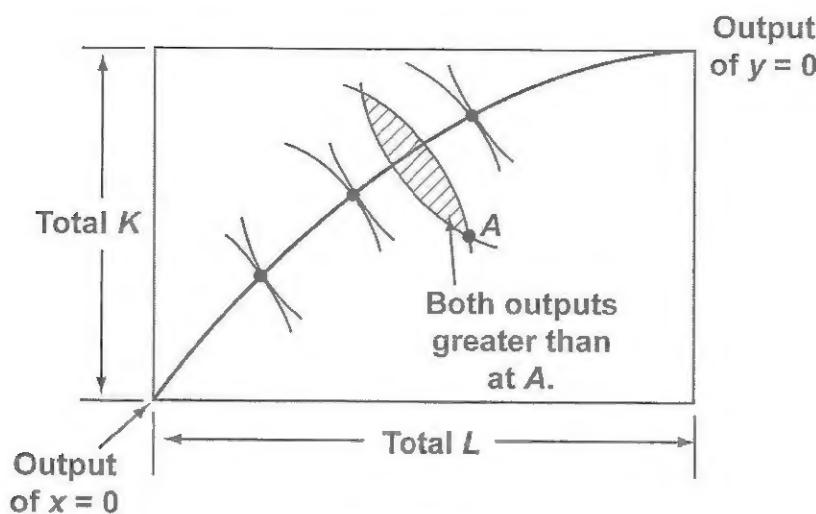


Exhibit 6

(a) What are the efficient points in the Edgeworth box diagram (Exhibit 6)? Elaborate. (10 marks)

(b) Use the connection between your box diagram in part (a) and the production possibility frontier to discuss what the frontier would like in the following cases:

- Production of good X uses only labor, production of good Y uses only capital. (5 marks)
- Both X and Y have the same production function and both exhibit constant returns to scale. (5 marks)

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